

0792: “R” SHIVER ME TIMBERS: CLINICIANS DOING STATISTICS! A NOVEL APPROACH TO DATA ANALYSIS AND DATA VISUALISATION IN MODERN MEDICINE, AN EXAMPLE USING CHRONIC LYMPHOCYTIC LEUKAEMIA (CLL) DATA

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Aim: To analyse pre-existing clinical and laboratory data on CLL patients, explore relationships between immune cell markers and prognosis and find novel ways of presenting large, complex datasets in simple visual forms.

Method: Data was analysed using the software environment “R”. Computer programming scripts were generated to analyse the dataset using multivariate analysis and 3D correlation graphs.

Results: Three statistically significant ($p < 0.05$) novel prognostic markers were discovered and trends towards significance were seen in a further two. Four novel visualisations were produced depicting the change in immune cell populations with age and how these changes are distinct to those seen in CLL.

Conclusions: The five novel prognostic markers discovered have already led to new research threads and may have significant clinical use. The four visualisations have already been used in demonstrations to a lay audience.

Computer programming and data visualisation is an under-exploited tool in all aspects of medicine. Although the quantity of literature has increased exponentially, methods of analysing complex data and presenting it in a simple, meaningful form is severely lacking. Although this project used CLL data, showing and explaining data to patients is part of the daily routine for the modern clinician, in all fields of medicine.

0929: CALOT'S TRIANGLE. A COMMON MISCONCEPTION OF BASIC ANATOMY

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Aims: Dissection of the Calot's Triangle (CT) is regarded as the key component to a safe laparoscopic cholecystectomy. Yet, JF Calot in his doctoral thesis of 1891, named the boundaries of his triangle as: the cystic duct, the common hepatic duct and the cystic artery. This study aimed to review the medical literature on the description of CT.

Methods: A focussed search was undertaken to evaluate the following: basic anatomy textbooks, surgical textbooks and pubmed (articles about CT published in 2011).

Results: Two commonly used textbooks (Last's and Gray's anatomy) inaccurately described the inferior border of the liver as one boundary of CT instead of the cystic artery. Similarly, the 'oxford handbook of clinical surgery' and 'essential general surgical operations by Churchill Livingstone' made the same error. 17 peer reviewed articles were published describing CT. Only one correctly described the boundaries. 4 were inaccurate and 6 did not provide an anatomical description of the triangle. Of the remaining 6: 4 were not accessible, 1 was in Serbian and 1 was a multimedia article.

Conclusion: The cystohepatic triangle is a common misnomer for the Calot's Triangle. Recognition of this misconception will aid teaching and training towards performing a safe cholecystectomy.

1105 – WINNER OF BASO~THE ASSOCIATION OF CANCER SURGERY PRIZE: IRRIGATION OF SQUAMOUS CELL CARCINOMA WOUNDS TO PREVENT LOCAL RECURRENCE

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Aim: Despite efforts to excise squamous cell carcinomas with a margin of normal tissue, some tumours are incompletely excised or cancer cells are “seeded” into the wound allowing local recurrence. Following surgical oncology procedures many operators irrigate wounds or body cavities with water rather than normal saline. The logic being that water will induce an osmotic shift of fluid into the cells, causing them to lyse.

Methods: SCC cells labelled with a lentivirus YFP/luciferase reporter were grown at clonal densities on standard culture dishes and on top of de-epithelialised dermis (DEDs), to simulate the operative wound environment.

Plates were irrigated with standard culture medium, water, normal saline and a 10% betadine solution.

Results: After 2 weeks, plates and DEDs were analysed for evidence of cell growth. Plates treated with water irrigation showed a decreased ability to form colonies, compared to those treated with culture medium or saline, however, substantial growth was still present. Only the 10% betadine solution showed complete absence of cell growth.

Conclusion: These experiments suggest that irrigating oncological wounds with water alone may not be sufficient to prevent seeding of tumour cells, and that irrigation with a betadine solution maybe a safer option.

1141: TARGETTING STEM CELLS IN SQUAMOUS CELL CARCINOMA

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Aim: Cancer stem cells may evade current therapies and allow a cancer to re-grow. By targeting the tumour stem cell population, we may control the disease and cause less harm to the patient's normal tissues. FRMD4A has been shown to be more abundant in human keratinocytes with a stem-like phenotype, and highly over expressed in a panel of human SCCs.

Methods: FRMD4A in human skin was studied using in-situ hybridization and immunofluorescence staining. Laser capture microscopy (LCM) was used to collect samples of the basal and granular layers of human epidermis in order to compare levels of FRMD4A by Q-PCR. In cell cultures derived from human HNSCCs FRMD4A was stably knocked down using lentivirus shRNAs. The effect on function was tested in vitro and in vivo by xenografting.

Results: Results of these studies revealed much higher levels of expression of FRMD4A in the basal layer compared to the granular layer of normal skin. Knockdown of FRMD4A disrupted normal cell-cell adhesion in HNSCCs. Growth and invasion of the SCC lines in vitro and in vivo was reduced in the FRMD4A knockdowns.

Conclusion: FRMD4A is a marker of stem cells in SCCs making it a potential target for future therapies.

BREAST SURGERY**0056: A NOVEL TECHNIQUE IN REPAIRING RECALCITRANT ABDOMINAL HERNIAS POST BREAST SURGERY USING MITEK BONE ANCHORS FOR SYNTHETIC MESH FIXATION**

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Introduction: Repair of recurrent abdominal hernias is a surgical challenge often presenting to plastic surgery as a last resort. Such recalcitrant hernias cause enormous morbidity and constitute a financial burden to the NHS. It is important to explore novel and potentially effective repair methods. We report on a technique utilising overlay prolene mesh fixed to bone using Mitek anchors.

Methods: All recurrent iatrogenic abdominal hernias repaired by one surgeon (2003–2010) were reviewed. The indications, operative details and clinical outcomes were documented.

Results: Seven patients (6F, 1M) aged 35–60 years had had a median of 3 hernia repairs prior to referral. The causes of herniation were incisional (5) and post-TRAM flap (2). The operations lasted a mean of 6 hours (r=3–10.5 hrs). There were no major post-operative problems although one patient requested removal of two of his eight Mitek anchors because of localised tenderness. Only one patient developed a recurrent lower abdominal bulge.

Conclusion: Mitek bone anchor fixation of prosthetic mesh reinforcement of abdominal wall hernia repairs is an effective repair technique associated with low morbidity. This method of recalcitrant hernia repair may be a useful addition to the plastic surgeon's armamentarium.

0098: DO WE NEED TO BIOPSY YOUNG WOMEN WITH CLINICALLY AND RADIOLOGICALLY BENIGN BREAST LUMPS?

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